What is claimed is:

1. A semiconductor device comprising:

a sealing body comprised of insulating region;

a metal-made support board which has at least a portion thereof covered with the sealing body and has a lower surface thereof exposed from the sealing body and constituting a first electrode;

a first electrode lead contiguous to the support board and projects from a one-side surface of the sealing body;

a second electrode lead and a control electrode lead which project from the one-side surface of the sealing body and extend parallel to the first electrode lead;

a semiconductor chip which is covered with the sealing body, has a first electrode on a lower surface thereof, has a second electrode pad and a control electrode pad on an upper surface thereof, and has a lower surface thereof fixed to the support board by a conductive bonding material;

connecting means which is positioned in the inside of the sealing body and electrically connects the second electrode pad with the second electrode lead; and

connecting means which is positioned in the inside of the sealing body and electrically connects the control electrode pad with the control electrode lead,

wherein the control electrode pad is arranged at a position from the control electrode lead and the second electrode lead

farther than the second electrode pad.

2. A semiconductor device according to claim 1, wherein the semiconductor chip has a quadrangular shape, one side of the semiconductor chip opposingly faces lead posts formed to distal ends of the control electrode lead and the second electrode lead, and the control electrode pad is positioned at one corner portion of the semiconductor chip which is formed contiguously to a side of the semiconductor chip which is opposite to the opposingly facing side.

3. A semiconductor device according to claim 1, wherein the semiconductor chip has a quadrangular shape, one side of the semiconductor chip opposingly faces lead posts formed to distal ends of the control electrode lead and the second electrode lead, and the control electrode pad is positioned at a midst portion of a side which is formed contiguously to the opposingly facing side and is orthogonal to the opposingly facing side.

4. A semiconductor device according to claim 1, wherein the connecting means is formed of a conductive wire, the second electrode pad and the second electrode lead are connected with each other through a plurality of wires, and the wires are thicker than a wire which connects the control electrode pad and the control electrode lead.

5. A semiconductor device according to claim 1, wherein a width of the second electrode lead is set wider than a width of other leads.

6. A semiconductor device according to claim 1, wherein the first electrode lead is positioned at the center, the control

electrode lead is positioned at one side of the first electrode lead, and the second electrode lead is positioned at another side of the first electrode lead.

7. A semiconductor device according to claim 1, wherein the second electrode lead is positioned at the center, the control electrode lead is positioned at one side of the second electrode lead, and the first electrode lead is positioned at another side of the second electrode lead.

8. A semiconductor device according to claim 1, wherein a plurality of second electrode pads are provided and the respective second electrode pads and the second electrode lead are electrically connected with each other by the connecting means.

9. A semiconductor device according to claim 8, wherein the plurality of second electrode pads are formed along the extending direction of the respective leads and the connecting means which is connected to the second electrode leads adopts the stitch bonding constitution in which the connecting means is connected with the plurality of second electrode pads respectively.

10. A semiconductor device according to claim 8, wherein the plurality of second electrode pads are formed in a staggered pattern along the direction which intersects the extending direction of the respective leads.

11. A semiconductor device according to claim 1,

wherein the connecting means which connects the second electrode pad with the second electrode lead is formed of a

conductive plate, and the connecting means which connects the control electrode pad with the control electrode lead is formed of a wire.

12. A semiconductor device according to claim 11, wherein the conductive plate is formed of a resilient ribbon strap and is connected with the second electrode pad and the second electrode lead by ultrasonic wave bonding connection.

13. A semiconductor device according to claim 11, wherein the conductive plate is formed of a metal plate molded in a predetermined shape and is connected with the second electrode pad and the second electrode lead by an adhesive material.

14. A semiconductor device according to claim 1,

wherein with respect to the leads which project from the sealing body, the second electrode lead and the control electrode lead have the surface mounting structure in which the second electrode lead and the control electrode lead have midst portions thereof bent and distal ends thereof extended while being positioned at a height equal to a height of the support board, and

wherein the first electrode lead which is formed contiguously with the support board is formed of a lead which is cut in the vicinity of the sealing body and is not used, or adopts the surface mounting structure having the same constitution as the second electrode lead and the control electrode lead.

15. A semiconductor device according to claim 1, wherein the semiconductor chip includes any one of transistors comprised

of a power MOSFET, a power bipolar transistor and IGBT which respectively use the first electrode, the second electrode and the third electrode as electrodes.

16. A semiconductor device according to claim 1, wherein a field effect transistor is incorporated into the semiconductor chip, the first electrode lead constitutes a drain lead, the control electrode lead constitutes a gate lead, and the second electrode lead constitutes a source lead.

17. A semiconductor device comprising:

a sealing body comprised of insulating region;

a metal-made support board which has at least a portion thereof covered with the sealing body and has a lower surface thereof exposed from the sealing body thus constituting a first electrode;

a first electrode lead which is contiguous to the support board and projects from a one-side surface of the sealing body;

a second electrode lead and a control electrode lead which project from the one-side surface of the sealing body and extend parallel to the first electrode lead;

a semiconductor chip which is covered with the sealing body, has a first electrode on a lower surface thereof, has a second electrode pad and a control electrode pad on an upper surface thereof, and has a lower surface thereof fixed to the support board by a conductive bonding material;

connecting means which is positioned in the inside of the sealing body and electrically connects the second electrode pad with the second electrode lead; and

connecting means which is positioned in the inside of the sealing body and electrically connects the control electrode pad with the control electrode lead,

wherein a plurality of second electrode pads are provided, and

wherein in the plurality of second electrode pads, the second electrode pad which is arranged close to the control electrode lead and the second electrode lead is arranged at a position closer to the control electrode lead and the second electrode lead than the control electrode pad.

18. A semiconductor device according to claim 17, wherein the semiconductor chip has a quadrangular shape, one side of the semiconductor chip opposingly faces lead posts formed to distal ends of the control electrode lead and the second electrode lead, and the control electrode pad is positioned at a midst portion of a side which is formed contiguously with the opposingly facing side and is orthogonal to the opposingly facing side.

19. A semiconductor device according to claim 17, wherein the connecting means is formed of a conductive wire, the second electrode pad and the second electrode lead are connected with each other using a plurality of wires, and the wires are thicker than a wire which connects the control electrode pad with the control electrode lead.

20. A semiconductor device according to claim 17, wherein a width of the second electrode lead is set wider than a width of each of other leads.

21. A semiconductor device according to claim 17, wherein

the first electrode lead is positioned at the center, the control electrode lead is positioned at one side of the first electrode lead, and the second electrode lead is positioned at another side of the first electrode lead.

22. A semiconductor device according to claim 17, wherein the second electrode lead is positioned at the center, the control electrode lead is positioned at one side of the second electrode lead, and the first electrode lead is positioned at another side of the second electrode lead.

23. A semiconductor device according to claim 17, wherein a plurality of second electrode pads are provided and the respective second electrode pads and the second electrode lead are electrically connected with each other by the connecting means.

24. A semiconductor device according to claim 17, wherein the plurality of second electrode pads are formed along the extending direction of the respective leads and the connecting means which are connected to the second electrode leads adopts the stitch bonding constitution in which the connecting means is connected with the plurality of second electrode pads respectively.

25. A semiconductor device according to claim 17, wherein the plurality of second electrode pads are formed in a staggered pattern along the direction which intersects the extending direction of the respective leads.

26. A semiconductor device according to claim 17, wherein the connecting means which connects the second

electrode pad with the second electrode lead is formed of a conductive plate, and

wherein the connecting means which connects the control electrode pad with the control electrode lead is formed of a wire.

27. A semiconductor device according to claim 17, wherein the conductive plate is formed of a resilient ribbon strap and is connected with the second electrode pad and the second electrode lead by ultrasonic wave bonding connection.

28. A semiconductor device according to claim 17, wherein the conductive plate is formed of a metal plate molded in a predetermined shape and is connected with the second electrode pad and the second electrode lead by an adhesive material.

29. A semiconductor device according to claim 17,

wherein with respect to the leads which project from the sealing body, the second electrode lead and the control electrode lead have the surface mounting structure in which the second electrode lead and the control electrode lead have midst portions thereof bent and distal ends thereof extended while being positioned at a height equal to a height of the support board, and

wherein the first electrode lead which is formed contiguously with the support board is a lead which is cut in the vicinity of the sealing body and is not used, or adopts the surface mounting structure having the same constitution as the second electrode lead and the control electrode lead.

30. A semiconductor device according to claim 17, wherein

the semiconductor chip includes any one of transistors among a power MOSFET, a power bipolar transistor and IGBT which respectively use the first electrode, the second electrode and the third electrode as electrodes.

31. A semiconductor device according to claim 17, wherein a field effect transistor is incorporated into the semiconductor chip, the first electrode lead constitutes a drain lead, the control electrode lead constitutes a gate lead, and the second electrode lead constitutes a source lead.

32. A manufacturing method of a semiconductor device comprising steps of:

preparing a lead frame including a support board which is formed of a sheet of patterned metal plate having a portion thereof bent by one stage, constitutes a first electrode and fixes a semiconductor thereon, a first electrode lead which supports the support board at a distal end thereof, and a second electrode lead and a control electrode lead which extend in parallel to the first electrode lead;

preparing a quadrangular semiconductor chip having a first electrode on a lower surface and a second electrode pad and a control electrode pad on an upper surface thereof;

fixing the semiconductor chip to the support board at the first electrode portion via a conductive adhesive material;

electrically connecting the second electrode pad of the semiconductor chip with the second electrode lead using connecting means and, at the same time, electrically connecting the control electrode pad of the semiconductor chip with the

control electrode lead through connecting means;

covering the semiconductor chip, the connecting means and portions of the second electrode lead and the control electrode lead with a sealing body by sealing them with insulating resin; and

removing unnecessary portions of the lead frame by cutting and forming the leads into the insertion mounting structure or the surface mounting structure,

wherein in the formation of the semiconductor chip, the second electrode pad and the control electrode pad are formed such that the second electrode pad is arranged close to the control electrode lead and the second electrode lead and the control electrode pad is arranged far from the control electrode lead and the second electrode lead,

wherein in fixing the semiconductor chip to the support board, the semiconductor chip is fixed to the support board such that the second electrode pad is arranged close to the control electrode lead and the second electrode lead and the control electrode pad is arranged farther from the control electrode lead and the second electrode lead, and

wherein in the connection using the connecting means, the second electrode pad and the second electrode lead are connected with each other using the connecting means and, thereafter, the control electrode pad and the control electrode lead are connected with each other using the connecting means.

33. A manufacturing method of a semiconductor device according to claim 32, wherein in the formation of the

quadrangular semiconductor chip, when one side of the semiconductor chip is made to opposingly face lead posts formed to distal ends of the control electrode lead and the second electrode lead, the control electrode pad is formed on one corner portion of the semiconductor chip formed contiguously to a side of the semiconductor chip which is opposite to the opposingly facing side.

34. A manufacturing method of a semiconductor device according to claim 32, wherein conductive wires are used as the connecting means, the number of wires used in connecting the second electrode pad with the second electrode lead is set larger than the number of wires used for connecting the control electrode pad with the control electrode lead, and the wires used in connecting the second electrode pad with the second electrode lead is set thicker than the wires used in connecting the control electrode pad with the control electrode lead.

35. A manufacturing method of a semiconductor device according to claim 32,

wherein the second electrode pad and the second electrode lead are connected with each other through a conductive plate, and

wherein the control electrode pad and the control electrode lead are connected with each other through a wire.

36. A manufacturing method of a semiconductor device according to claim 35, wherein a resilient ribbon is used as the conductive plate, and the conductive plate is connected with the second electrode pad and the second electrode lead by

ultrasonic wave bonding connection.

37. A manufacturing method of a semiconductor device according to claim 35, wherein a metal plate molded in a predetermined shape is used as the conductive plate, and the conductive plate is connected to the second electrode pad and the second electrode lead by an adhesive material.